

CENTRAL VALLEY FLOOD MANAGEMENT PLANNING PROGRAM



DRAFT CLIMATE CHANGE THRESHOLDS APPROACH WORK GROUP CHARTER

The Phase 2, Climate Change Thresholds Approach Work Group (CCTAWG) assists the Department of Water Resources (DWR) in developing contents for Phase 2 of the Central Valley Flood Protection Plan (CVFPP) development process.

A. Introduction

In 2007 the California legislature passed and the Governor signed into law a series of laws regarding flood management including Senate Bill (SB) 5. Known as the Central Valley Flood Protection Act (Act), these laws set the framework and guidance for preparation of the CVFPP.

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DWR is required to prepare the CVFPP as a sustainable, integrated flood management plan by January 1, 2012, for adoption by the Central Valley Flood Protection Board (Board) by July 1, 2012. The plan is to focus on areas of the Central Valley currently receiving protection from the State Plan of Flood Control facilities.¹ The Plan is to be updated every five years.

The 2012 CVFPP will be accompanied by a Programmatic Environmental Impact Report consistent with the California Environmental Quality Act (CEQA). Additional technical studies (feasibility studies, engineering, and designs) and site-specific environmental analyses will be required before individual elements of the CVFPP can move forward to construction.

The 2012 CVFPP will be developed using an iterative planning process completed in four phases:

- Phase 1: Scope Definition and Goal Development (Completed)
- Phase 2: Management Action and Evaluation Method
- Phase 3: Regional Solution Sets Development
- Phase 4: System Solution Sets Development

¹ A system of approximately 1,600 miles of federal levees the Board or DWR is committed to maintain. See <http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/spofc> for more information.

Past Phase

Phase 1 – Recently completed, this phase focused on scope definition for key plan topics, such as climate change, defining current regional conditions and future challenges; problems and opportunities; and goals and objectives. Work from the Phase 1 Climate Change Scope Definition Work Group (CCSDWG) resulted in a CCSDWG Summary Report.² The report recorded the outcomes of the group's efforts and presented the following deliverables:

1. List of Key Aspects of Climate Change that May Affect Flood Management
2. List of Existing Problems and Expected Future Challenges within the CVFPP Project Area Related to Climate Change
3. Checklist of Climate Change Considerations for the CVFPP
4. List of Related Climate Change Projects and Programs
5. List of Climate Change References for the CVFPP

Input from the CCSDWG was utilized in development of the Regional Conditions Summary Report³ (RCSR), which was the first major milestone report in CVFPP development. The input from the CCSDWG was not a separate section in the RCSR; but rather, incorporated in sections, where appropriate, similar to input from other work groups.

Climate change considerations will continue to be incorporated in all aspects of the CVFPP planning process. As such the CCSDWG Summary Report will remain a draft document until the CVFPP is finalized, as will all interim CVFPP documents. Further, development of the CVFPP may yield additional improvements to the results documented in this CCSDWG Summary Report.

Current Phase

Phase 2 – This phase, for which this group is chartered, will help identify a broad set of individual management actions for consideration in the CVFPP; review evaluation methods and screening criteria. Results from this phase will be summarized in the Interim Progress Summary No. 2 (IPS No.2). The CCTAWG in this phase will focus primarily on evaluation methods. In particular work of the group will assist in quantification of how climate change will impact the flood control system on a watershed scale in the San Joaquin and Sacramento basins.

Future Phases – New technical work groups will be chartered or re-chartered for future Phases. Following are tasks expected during those Phases.

Phase 3 – Assist in formulating potential solution sets by region; compare and evaluate potential regional solution sets; and discuss regional priorities and trade-offs.

Phase 4 – Assist in developing and comparing potential systemwide solution sets; explore systemwide trade-offs; and develop systemwide objectives. Groups will also be asked to recommend next steps for State action and assess level of agreement.

² A copy of this report maybe found at: <http://www.water.ca.gov/cvfmp/docs/CCSDWGSummaryReport20091209.pdf> .

³ A copy of this report maybe found at: <http://www.water.ca.gov/cvfmp/documents.cfm>

In each phase of the plan development, work groups will be asked to recommend next steps for State action and assess level of agreement.

More details of these development phases can be found in the Interim Progress Summary No. 1 (IPS No.1), available at the CVFMP Web site (<http://www.water.ca.gov/cvfmp>).

B. Work Group Focus

The CCTAWG is a technically-focused work group assisting with developing an evaluation framework to incorporate climate change planning considerations into the CVFPP from an event-based hydrologic aspect. The work group will provide external expertise on this emerging scientific subject. The group will focus on application of the science in the most uncertain element, event-based forecast, in the existing climate change scenario analysis.

In particular, the work group will further develop the concept of threshold analysis approach recommended by the CCSDWG in Phase 1. Based on the preliminary concepts advanced by the CCSDWG, the Threshold Analysis will target the characterization and differentiation of the system capacity and flexibility in future events under the influence of climate change. The implementation of the threshold approach will provide priority and insights for needed improvements on flood system capacity and flexibility under the climate change influences, and for the direction of focused research in further narrowing down the uncertainties associated with climate change forecasts.

The CCTAWG will explore various questions in developing a Threshold Analysis framework and implementation strategy:

- What are the possible key indices to use in characterizing systemwide consequences under climate change?
- What are the key characteristics of flood events as controlled variables in vulnerability assessments?
- How should the system vulnerability under climate change be reported to properly capture the uncertainties?
- What are the requirements for the evaluation tool(s) and modeling approaches for threshold analysis?
- What are the available tools and modeling approaches, and what are anticipated tools, modeling and information development for near-term and longer-term progress toward the threshold analysis?
- What types of products from the threshold analysis can be expected as tools, information and modeling approaches improve?

The CCTAWG will be conducted in coordination with other ongoing activities for the CVFPP content development or related activities, including:

- Preliminary baseline risk characterization based on the currently available hydraulic/hydrodynamic model prepared in the Comprehensive Study

- Preliminary information for targeted storm characteristics for hydrologic events under climate change from the separate efforts in the ongoing research projects sponsored by DWR's Division of Flood Management and other agencies/organization
- Consistency coordination within the DWR for climate change studies
- USACE's Central Valley Integrated Flood Management Study (CVIFMS), a federal companion study to the CVFPP

C. Mission & Deliverables

The mission of the CCTAWG is to assist DWR in preparing content for 2012 CVFPP. It is anticipated that the Threshold Analysis framework, when developed, will be implemented using existing available models and information for 2012 CVFPP.

However, work products will be structured to support longer term efforts, and adaptable for use with improved tools and information for updated assessments.

Specific CCATWG Deliverables include the following:

1. Articulation of a Threshold Analysis framework
2. The framework implementation strategy with considerations of planned information and modeling tool updates from the CVFPP efforts and/or other related programs/projects
3. Anticipated products from staged implementation of modeling tools.

Deliverables will be documented in Climate Change Threshold Analysis Technical Memorandum or similar document.

CVFPP Phase 2 engagement efforts (e.g., regional work groups, topic work groups, and workshops) will provide opportunities for interaction among members of different work groups and the public and allow information sharing and knowledge transfer.

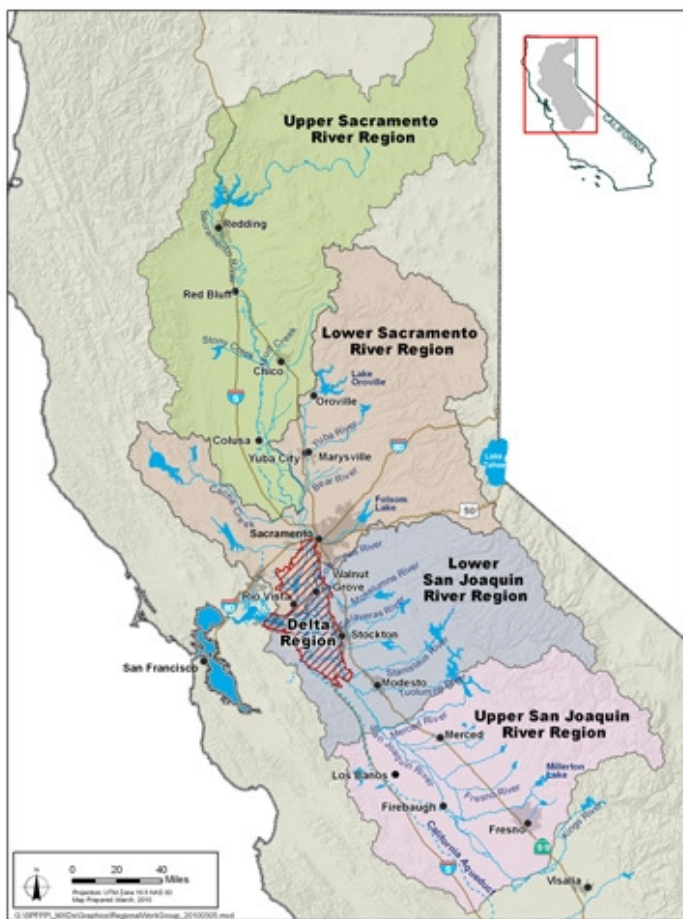


Figure 1

Information and deliverables developed by the CCTAWG will inform the Regional Management Actions Work Groups (held for five regions shown in Figure 1) throughout the period. Various public workshops designed for management action discussions will also provide input to the CCTAWG.

D. Importance

As noted above, the task is urgent as flood threats in the Central Valley are potentially substantial and even more so in consideration of climate change impacts from sea level rise and winter flooding, as detailed in the Phase 1 CCSDWG Summary Report, available on CVFMP Web site at <http://www.water.ca.gov/cvfmp/>.

As reported in the CCSDWG, from the perspective of analysis and prediction, climate change studies indicate extreme events have the highest degree of uncertainty. Many researchers and practitioners are actively conducting research to improve the understanding of the magnitude and pattern changes of extreme events under climate change. The Threshold Analysis approach proposed by the CCSDWG is considered the preferred approach at this time to inform flood managers about the changes in system vulnerability, if any, triggered by climate change. This approach will also benefit researchers in distilling focus for further research to narrow down the uncertainties most relevant for flood management decision making. A successful effort by the CCTAWG will support improved planning to help protect people and property, improve recovery and response to flood events, and reduce flood consequences.

E. Membership

Work group members are selected by DWR based on application. Individuals with relevant analytical background serving on previous work groups will be given priority. The CCTAWG size will be limited to a maximum of 15 people to allow for facilitated dialogue and interaction. DWR seeks group members with extensive technical knowledge related to extreme events under climate change, able to interact at a peer level with other group members. All members will be expected to have sufficient knowledge to help develop the desired information outlined in Charter Section C (Missions and Deliverables).

Regular attendance will be essential to the continuity of the group. DWR may permit alternates on a case-by-case basis. If alternates are permitted, they are expected to act on behalf the member. The member and alternate must remain fully briefed and able to work without causing the group to revisit items previously considered.

F. Participants

Executive Sponsor: Jeremy Arrich
DWR Central Valley Flood Planning Office (CVFPO) Representative: Erin Mullin
Subject Matter Expert: Mike Anderson (State Climatologist)

CVFMP Partners: Board, U.S. Army Corps of Engineers, California Natural Resources Agency

Work Group members:

- | | |
|-------|--------|
| 1. Xx | 9. Xx |
| 2. Xx | 10. Xx |
| 3. Xx | 11. Xx |
| 4. Xx | 12. Xx |
| 5. Xx | 13. Xx |
| 6. Xx | 14. Xx |
| 7. Xx | 15. Xx |
| 8. Xx | |

Other DWR Resource Personnel: FloodSAFE Environmental Stewardship and Statewide Resources Office (FESSRO) Staff

Other Key Technical Support: DWR has assembled a team consisting of DWR staff, additional subject-matter experts (as needed), consultant support.

Collaboration/Facilitation Team: Sacramento State, Center for Collaborative Policy.

H. Roles and Responsibilities

Executive Sponsor: Provides leadership to and serves as a resource for policy guidance on an as-needed basis for development and completion of CCTAWG deliverables.

Central Valley Flood Planning Office Representative: Serves as DWR staff lead and helps ensure that all relevant perspectives related to the chartered topics are being discussed and captured in written documents. Helps ensure that appropriate people from DWR Divisions and other partner organizations are invited and given opportunity to participate. Responsible for executing the CCTAWG Charter. Maintains consistency and integration of CCTAWG functions and deliverables within the context of the CVFPP and FloodSAFE California. Responsible for reporting to the Executive Sponsor and other DWR management functions, as appropriate.

Subject Matter Expert: Actively participates in CCTAWG meetings as appropriate. Serves as a resource to the CCTAWG for agency information and resources necessary to successful completion of the CVFPP.

DWR FloodSAFE Environmental Stewardship and Statewide Resources Office (FESSRO) Staff –
Serves as resource on FloodSAFE and systemwide environmental stewardship integration considerations.

Key Technical Team Staff: Consists of topic-specific subject matter experts from DWR, and outside expertise as needed. Staff will communicate and convene as needed to meet with, plan, and support the CCTAWG on specific work assignments.

Facilitation Team Staff: Provides neutral leadership to the dialogue process and meeting management. The facilitators are content neutral, which means they will not try to promote a particular outcome for the group but instead work with the group to develop the best findings the group is able to produce. The facilitators are not process neutral, which means they will work to help the group stay within scope and follow the terms of

the charter. They will also actively suggest methods to accomplish tasks and oversee preparation of meeting notes.

CCTAWG Members: Serve as the liaison to communicate information to and from their organizations; act in a manner that will enhance trust among all partners and interested parties; and contribute expertise, data and information to clarify discussions, eliminate false assumptions, and advance innovation in creating recommended content.

Sub-Committee Members: Convened to address specific topics or questions, members' work will be bounded by specific timeframes and specific technical or policy questions to be considered. Sub-committee members are those with expertise necessary to address the questions under consideration.

I. Other Related Projects

The CVFPP will be informed by numerous ongoing FloodSAFE projects and programs and similarly CCTAWG activities are an integral part of FloodSAFE. Additional information on the FloodSAFE Initiative may be found at www.water.ca.gov/floodsafe.

Other State of California public processes that intersect with this element of flood planning include:

- Delta Levee Improvements Program (Delta Special Projects, Delta Subventions)
- Bay Delta Conservation Plan/Delta Habitat Conservation and Conveyance Program
- Delta Vision DWR Climate Change Studies
- DWR Flood Protection Projects and Project Grants
- DWR Emergency Response Planning Activities
- DWR Flood Project Inspection and Reporting Activities
- DWR Flood Project Maintenance Activities
- FloodSAFE Central Valley Floodplain Evaluation and Delineation Program
- FloodSAFE Statewide Flood Management Planning Program
- FloodSAFE Urban and Non-Urban Levee Evaluation Programs
- DWR Integrated Regional Water Management Planning Program
- DWR Reservoir Reoperation Studies
- CALFED Surface Storage Investigation Program
- Various ongoing U.S. Army Corps of Engineers plans and projects in the Central Valley, including the Central Valley Integrated Flood Management Study

J. Products Review Process

Work products of the CCTAWG will be used to develop the IPS No. 2 and a more detailed management actions technical memorandum, to be prepared by the Product Delivery Team that includes DWR, the Board, and U.S. Army Corps of Engineers staff and consultants. Regional Management Action Work Group members and partners will have the opportunity to review and comments on these products prior to release to the public.

The Board is responsible for adopting a plan that will meet the requirements of the authorizing legislation and provide direction for broadly supported actions to improve integrated flood management.

K. Schedule and Work Plan

DWR and the CCTAWG operate under specific, legislatively directed time lines. The CCTAWG will be convened in June 2010, and is expected to complete its work by August 2010. The frequency of CCTAWG meetings is expected to be three to four times total, with more frequent sub-committee meetings possible based on need to accomplish the CCTAWG mission. Depending on need, one or more sub-committees (see Section H, Roles and Responsibilities) may be formed. Sub-committee meetings will be scheduled as required.

L. Decision Making within CCTAWG

The CCTAWG will operate as a body seeking broad agreement about the management actions approach for the CVFPP. If various perspectives offered do not agree, the differences will be recorded as part of the draft content.

Input is used to assist the Sponsors and project staff in understanding the extent to which there is shared perspective or meaning about the items being considered. Items moved forward as a group product will be considered by the full CCTAWG. Items before the body will be presented in writing and members allowed sufficient time to consider them. Members will be permitted to note their level of support for an item under discussion as ranging from Unqualified Support, General Support, Qualified Support, Qualified Disagreement, to Fundamental Disagreement. The level of support for various items will be recorded. If an item receives a level of disagreement, the group will be asked to continue working to reach agreement or until it appears a resolution is not necessary or attainable. At that time, the facilitation team will note the nature of the disagreement, and in consultation with the CCTAWG and sponsors, make a determination as to the best way to proceed in the particular topic area. Straw polls or requests for general preferences may also be conducted. These types of inquiries are for the purpose of refining ideas, providing direction to the project staff, or both.

M. Protocols, & Standing Group Rules

Protocols

- Outside of CCTAWG meetings, people will represent comments made in these meetings as organizational or general group comments. Personal references should be avoided.
- All members agree to act in good faith in all aspects of this process and to communicate their interests.
- Members agree not to make commitments they do not intend to keep.
- Parties will act consistently in other forums where similar topics are being discussed, including sessions with the press.
- Members agree to make a concerted effort to provide requested information to other members or to explain the reason why not.
- Meeting notes will be prepared with a focus on key points, ideas, and action items rather than as transcripts. Unless very specific to understanding the content, references will generally be made to the content rather than the members.

Standing Ground Rules

- Use common conversational courtesy. (Don't interrupt, use appropriate language, avoid third party discussions, etc.)
- Humor is welcome and important, but humor should never be at someone else's expense.
- All ideas and points have value - You may hear something you do not agree with. Please remember that the purpose of the RMAWG is to share ideas and capture various perspectives. All ideas have value in this setting. You are not required to defend or promote your perspective, but you are asked to share it. If you believe another approach is better, offer it as a constructive alternative. Please avoid ascribing motives to others.
- Members have a right to change their minds as information is discussed and conditions change.
- Cell Phone/ PDA Courtesy - Most of the participants have demanding responsibilities outside of the meeting room. We ask for your attention during the full meeting. Please turn cell phones, or any other communication item with an on/off switch to "silent." If you do not believe you will be able to participate fully, please discuss your situation with one of the facilitators.
- Be comfortable - Please help yourself to refreshments or take personal breaks.
- Spelling doesn't count
- Honor time
- We have ambitious meeting agendas, in order to meet our goals it will be important to follow the time guidelines provided by the facilitator.

N. Amendments

The CCTAWG may amend the charter in consultation with the Executive Sponsors and project staff.